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Space Science: Sinking Under Reagan Austerity

Space exploration—contrary to the hopes and expectations that flourished when Ronald Reagan won the presidency—is facing increasingly bleak prospects.

When Reagan was elected, many members of the space-science community were quietly optimistic that, with his California background, defense interests high on the political agenda, and several high-technology enthusiasts among his close advisers, space research might fare better than it had under President Carter.

In practice, however, it is doing considerably worse. Cost overruns on the shuttle program, together with general budget stringencies from which the National Aeronautics and Space Administration has not been exempt, have shifted the whole emphasis of space science policy-making from deciding which new projects should be started, towards choosing which existing projects should be eliminated. Behind this is a growing question of whether—despite the apparent message of opinion polls—the US remains seriously interested in scientific space exploration, or whether defense and commercial projects will account for virtually all of the US presence in space.

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No new starts were proposed by the Carter Administration for fiscal years 1980 or 1981, because of the Administration's commitment, first to keep the financially ravenous space shuttle on schedule, and to sustain ongoing work on the space telescope, the Galileo mission to Jupiter (first approved, after a tough fight with Congress, in 1977), and the International Solar Polar Mission, planned jointly with the European Space Agency. Several new starts were proposed in the budget which Mr. Carter presented to Congress last January,

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R&D Braces for New Cuts

Federal research agencies are bracing for another round of budget turbulence, following the President's announcement of possible further cuts to cover his miscalculated deficit.

With the new fiscal year beginning in just two weeks, the call for further reductions came just as the end-of-summer pace picked up for preparation of the FY 1983 budget, due for delivery to Congress in January. The word is that the 1983 work will be temporarily put aside while the 1982 spending plans are combed over for savings. Just where they're going to come from in a tightly stretched R&D budget is a painful puzzle for Reagan's R&D managers.

White House Science Advisor George A. Keyworth III, in an interview with SGR, said, "I don't know what the magnitude [of the reductions] is going to be. We're still in process of assessing what the budgetary requirements are going to be." To which he added, "I don't see places where it can easily come out of." He said that if even 10 per cent were cut from NASA's science programs, "you'd practically emasculate NASA."

In Brief

On the Road: Presidential Science Adviser George A. Keyworth III goes to Japan September 22 as head of a US delegation that's to meet with Japanese research officials for discussions of R&D collaboration between the two countries. Keyworth visited Mexico earlier this month for similar talks with officials there. Around mid-October, he'll be host in Washington for the annual get-together of Chinese and American research officials—delayed this time because Reagan was slow in filling the science post.

Initial reports about filling the NIH directorship by Labor Day have not panned out (SGR Vol. XI, No. 12). But the slower-than-expected pace apparently comes from nothing more serious than Washington's customary summer slowdown. A three-member panel, chaired by Assistant Secretary of Health Edward Brandt Jr., is looking over a list of nominees, will soon forward its advice to Health and Human Services Secretary Richard S. Schweiker, who will send his advice to the White House. Brandt has told NIH Acting Director Thomas E. Malone that the selection process is likely to extend beyond September.

Everyone knows that California tops the nation in receipt of federal R&D funds, receiving about one-quarter of the total annual layout. But who's second? Answer: Maryland, with 8.5 per cent of Washington's $27.9 R&D billions in 1979. Most of it goes to the government's own research facilities, including NIH, the Naval Air Test Center, the Army's Edgewood Labs, The Bureau of Standards, Goddard Space Flight Center, and the Beltsville Agricultural Research Center.

. . . New Troubles Loom for Jupiter Mission

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shortly before leaving office. But these were among the first items to be chopped from the budget in February by Mr. Reagan's Office of Management and Budget, soon followed by a recommendation that the US should withdraw from the solar mission.

"For three years we have said that these cutbacks and delayed starts are only temporary," says one official in NASA's Office of Space Science. "But you have eventually to arrive at the conclusion that what we are seeing is a trend and not an anomaly. You have to accept that this is real life."

One of the current causes for concern is whether sufficient political support can be sustained for the Galileo project, in which two spacecraft will be launched simultaneously to Jupiter, one to go into orbit around the planet, the other to probe its atmosphere and surface. Earlier this year, it was widely rumored that Galileo had been listed for termination by OMB. But the project survived, due partly to intense lobbying by scientists from NASA's Jet Propulsion Laboratory, where the Galileo project is being developed, as well as by the German government, which is contributing towards the development costs.

Now Galileo is once again in trouble, this time as a result of disputes over the Centaur rocket which, it is currently planned, would launch the two spacecraft towards Jupiter from the space shuttle. The original plan was to launch the two from the shuttle by the Inertial Upper Stage (IUS) being developed by the Boeing Corporation for the US Air Force. But it soon became clear that weight restrictions with the shuttle would require a double launch. This was revised late last year when, following further problems with IUS development, it was decided to shift to a Centaur rocket as an upper stage.

It still remains uncertain whether the Reagan Administration will accept this shift in strategy. Adapting the Centaur rocket as a shuttle upper stage could cost up to $500 million, while its use will be somewhat limited apart from the Galileo mission—which itself is already considerably above its initially approved budget.

Furthermore, a minor storm is brewing over the way that NASA awarded the contract for building the adapted Centaur rocket to General Dynamics. At least one other aerospace company, McDonnell Douglas, has formally protested to NASA that the contract was awarded without going through a process of open bidding. McDonnell Douglas has some powerful allies in Congress, and NASA officials now expect some form of objection to their decision from Capitol Hill.

If NASA is forced to open bidding for the upper stage launcher to competition, this could delay the planned launch date even further, to 1987. (Originally planned for a 1983 launch from the shuttle, the current schedule is for a Galileo launch in 1985, according to Mr. Reagan's budget proposals, which slipped the program one year rather than eliminating it.) Further delay, it is widely feared, as well as the extra costs which it would inevitably incur, would make the Galileo project highly vulnerable to its Congressional critics. Among these is Rep. Edward Boland (D-Mass), Chairman of the Independent Agencies Subcommittee of the House Appropriations Committee, who led a major campaign to stop the project from going ahead in 1977 and is still said to be licking the wounds of his defeat.

Another project in trouble is the International Solar Polar Mission, still scheduled for launch in 1986. The European participants, who have already contributed over $100 million towards the mission, complained bitterly at the breach of international trust when the US declared unilaterally in March that, as part of its budget cutbacks, it was proposing to terminate work on the spacecraft which it was preparing to contribute to the two-vehicle mission. Partly as a result of these protests, Congressional committees have so far demonstrated a desire to see the money for US participation put into NASA's 1982 budget. The House Appropriations Committee, for example, recommended increasing NASA's budget by $35 million over the Reagan Administration's request, and specified that the Solar Mission was to be one of the projects supported with this money. Authorization committees in the House and the Senate

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. . . OMB Aide Says Space Research Can Wait

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have been even more generous. And the European Space Agency, keen to salvage what it can, has offered to build the second spacecraft for NASA on highly concessionary terms. (At present NASA's contract is for the spacecraft to be built by TRW.)

But at present, the prospects for the mission are not bright. Hans M. Mark, the Deputy Administrator at NASA, told a meeting of the Space Science Advisory Board in July that the Reagan Administration's priorities were on economic revitalization and building up its military strength, and that "everything we do in NASA has to be carried out in that climate." It is rumored that the preliminary list of budget requests submitted internally to NASA Administrator James M. Beggs late in August by Andrew J. Stofan, Acting Associate Administrator for Space Science, did not include money for the joint mission with Europeans. On hearing this, European space officials have stepped up strong pressure, both directly and through the State Department, to have the money inserted before the budget request goes to OMB; at present it is uncertain whether or not they have succeeded.

This is not Europe's only source of disenchantment with NASA. In the mid-1970s, European space scientists agreed to design and build for NASA the Spacelab, a Shuttle-borne laboratory that will be used for a variety of in-orbit experiments. Initially planned for launching in 1981—and built on this schedule—the first Spacelab is due to be delivered to NASA later this month. Yet because of delays in the development of the shuttle, the first launch is now unlikely to be until September 1983, at the earliest (the present official date),and could be considerably later if NASA has to reduce still further the initial operating schedule for the shuttle.

The problem for the European Space Agency is that the longer the first flight is delayed, the more expensive it becomes keeping together the teams of technicians which are supposed to service Spacelab, at least for its early flights. Last year the costs exceeded 120 per cent of the original estimate, the ceiling up to which contributing countries agree to continue to provide support. Anything over this limit has to be renegotiated between the countries involved. Italy, in particular, protested that it could ill-afford to continue to pay its share of the extra costs resulting from NASA's delays. With the prospects of yet further delays before Spacelab goes into orbit, the European agency expects that costs for Spacelab will now exceed 140 per cent of the original estimates—and that breaching this second ceiling will set off further tension between member countries and the US over how these additional costs should be allocated.

It would be wrong to paint the picture for space science in the US as uniformly bleak. Several smaller satellites are soon to be launched as part of the Explorer series. For example, the Solar Mesosphere Explorer was due to be placed in orbit on September 15 to study reactions between sunlight, ozone, and other chemicals in the earth's atmosphere. The Venus Orbiting Imaging Radar (VOIR) and Gamma Ray Observatory have (officially) openly been deferred from 1986 to 1988 launch. The recent Voyager encounters with Saturn have provided a wealth of scientific information. And the space telescope, at present on top of NASA's space-science priority list, is a facility which, if successfully completed and launched as planned from the shuttle in the late 1980s, promises to put the US in a position of clear leadership in optical astronomy up to the end of the century; it seems (just) to be meeting its development schedule.

But enthusiasm from the top for new projects is in relatively short supply. In an interview with *Aviation Week,* NASA Administrator Beggs said that he thought the members of the Reagan Administration "basically" supported the continuance of planetary solar-system exploration. He explained the qualification by saying: "I think they would argue that they take a slightly more practical approach than maybe has been taken in the past, which is to say that I think they would quarrel with the scientific community somewhat that some things that have been done ought to be done over again simply because you can do them a little better now."

Equally revealing are comments by Hugh F. Loweth, OMB's Deputy Associate Director for Energy and Science, at a meeting of the Space Science Advisory Board in March. Loweth said that in his opinion, NASA space missions were getting too expensive, and suggested that one solution might be to spread them out over a longer time. Giving the customary excuse that all research and development programs suffer during a period of tight budgets, he added that it was the

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House Inquiry on Innovation

A subcommittee of the House Science and Technology Committee opened six days of hearings on September 9 on "The Human Factor in Innovation and Productivity." Scheduled witnesses include several Japanese and European industrialists, plus a broad selection of American specialists from academe, government and industry. Rep. Stan Lundine (D-NY) is chairman for the hearings, which are being conducted by the Subcommittee on Science, Research, and Technology. Lundine's staff associate for the hearings is Jeffrey A. Smith; tel. (202) 235-3161.

Old Boys Speak Up for Reagan Science Adviser

All that carping about presidential Science Adviser George A. Keyworth III not coming from the inner circle that's usually filled the White House post has apparently irked some insiders to the point where they're publicly proclaiming that he's really okay.

Keyworth, who logged long service as a research physicist and administrator at the Los Alamos National Laboratory before Mr. Reagan selected him for the advisory post, further irritated some members of the old-boy net by insisting that he was not coming to serve as an advocate for science (SGR Vol. XI, No. 11). Added to that, Keyworth is not a member of the National Academy of Sciences and was virtually unknown in science-advisory circles when his selection became known. In fact, Lewis Branscomb, of the inner circle (chairman of the National Science Board and Chief Scientist of IBM) said of Keyworth, "I do not know the gentleman."

Well, some of the insiders, including several associated with the Republican wing of the house of science, seem to feel that this knocking has gone on long enough. So, in the July-August issue of *SIPIscope,* publication of the New York-based Scientists' Institute for Public Information, the counterattack is launched, pegged to a Q. and A. with Keyworth in a previous *SIPI* issue.

Edward E. David Jr., who served as Nixon's science adviser—and bailed out unblemished before Nixon sourly dismantled the White House science office—declared in a letter that Keyworth "is a forthright and intelligent person. He is not trying to soothe feelings or pull the wool over anyone's eyes." David, who is President of Exxon Research and Engineering, added that "we are fortunate to have Dr. Keyworth in position," and noted, "From my personal contact with him, I believe that Dr. Keyworth is highly conscious of the values and ethics of the scientific and engineering community."

Similar praise is offered by Frederick Seitz, a former White House science consultant who's retired from the presidency of Rockefeller University and the National Academy of Sciences. From having met Keyworth, said Seitz, "It is clear that he is an enormously capable individual and comes to the office as a relatively free agent who intends to do his best to help the scientific community support the current administration in furthering the interests of the country."

Seitz goes on to state that Keyworth "emphasized that the President's experience as Governor of the state of California, which has a very strong scientific base, gave him a keen sense of the importance of science and left an indelible mark on him. Keyworth also made it quite clear that there is no reason to suppose that either basic or applied science will fare badly . . . . "

The chorus is joined by John Truxal, Stony Brook, Professor of Technology and Society, who served as a White House consultant when his old colleague David was presidential Science Adviser.

Stating that "I really have no profound comments worthy of publication," Truxal added that "I think it is unfortunate that the 'science establishment' too often races to criticize a nominee not from that group before there is a chance to assess the attitudes and actions of the individual . . . ."

SPACE *(Continued from page 3)*

philosophy of many at OMB that missions can always be delayed since most of the opportunities will always exist.

To some members of the space-science community, this apparent lack of enthusiasm for space science within the Executive Branch has been a signal to increase their lobbying efforts. Bruce Murray, Director of JPL, told members of the Advisory Board in July that there needed to be a more aggressive attempt to sell space-science projects to Congress, to the public and to the White House, with different groups promoting different ideas rather than forming a consensus behind an agreed priority list. True to his own words, Murray has been gathering support for a mission to intercept Halley's Comet when it passes near the earth in 1987. The project is currently under design at JPL, but is placed relatively low on the priority list by outside scientists, and has so far failed to generate any appreciable support within the Administration.

The Administration's position with regard to space science is expected to become clearer later in the year with the publication of a policy statement on space policy, currently being drafted under the guidance of presidential Science Adviser George A. Keyworth III, Director of the Office of Science and Technology Policy. Keyworth, who was assigned the task by the National Security Council, has already listened sympathetically to both the plans and complaints of NASA space scientists. But his principal focus is likely to be on rescuing a viable space shuttle program—currently expected to exceed its estimated costs by between $300 and $590 million next year—and on the relative merits of aiming for a manned space station or a less ambitious (though apparently more preferred at present) scheme for a temporary docking facility for shuttle payloads. Either could be NASA's next major goal in space. Given the many pressures on the agency's budget, space science could well find itself having to sit out much of the rest of the decade.—DD

Defense: A Booming Bankroll for Basic Science

With lots of new money, and eased rules for distributing it, the Defense Department is rapidly enlarging its role as a major source of support for basic research.

Pentagon officials say that the armed services will allot $722.8 million for basic research in fiscal 1982, which begins on October 1. This is a 9.3-per-cent "real" increase from the $614.4 million they're spending this year. (The National Science Foundation is still ahead as a patron of basic research, with a budget of $950.1 million for next fiscal year, but unlike DoD, it's at a standstill pace of just keeping up with inflation.)

Slightly more than $220 million of DoD's funds is earmarked for in-house programs, with the remaining $500 million allotted to university and industrial laboratories.

These sharp increases are part of a continuing effort, beginning in the Ford Administration, to restore the scientific links that the Pentagon enjoyed with academe prior to the Vietnam War. Support for this effort has been fairly consistent over three administrations. The latest stamp of approval comes from Defense Secretary Caspar W. Weinberger, who recently stated, "The national base of basic research is inadequate to meet future DoD needs and substantial sustained real growth in defense research is needed to restore this base."

Along with the spending increases, the Pentagon has convinced Congress to change the rules so that it can award simple grants instead of complex contracts to universities. Research support for universities and other nonprofit organizations will be handled with a new, one page form; DoD also plans to ask the Office of Management and Budget to modify the controversial Circular A-21 to reduce the administrative burden of university researchers who must account for the time spent on federally supported research.

Although military support of basic research has not yet matched the levels of the mid-1960s, it has more than doubled since 1975. Most of the increase in basic research will go to universities, which can expect a 17.4-per-cent real increase, or a total of $319.5-million, over the amount they received from the military in fiscal year 1981.

Universities this fall will also receive an increase in ROTC scholarships, many of which are awarded to students in science and engineering. In addition, the Pentagon plans to launch a new graduate fellowship program early next year to support predoctoral science and engineering students in areas needed by the military, such as computer science, advanced materials and vacuum-tube research. Defense officials say that by

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In Quotes: Britain's Formula for Austerity and Excellence

The following is from a section on "Research in Europe and the United States," by Bruce L. R. Smith and Charles V. Kidd, in the forthcoming edition of Outlook for Science and Technology: The Next Five Years, *a report issued under the auspices of the White House Office of Science and Technology Policy:*

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"Despite financial austerity, research of the highest quality continues to be performed in many British laboratories, especially those of the leading universities. With exceptions in some fields in some periods, the scientific community in the United Kingdom has not been rich in material resources. But the country has produced outstanding investigators in many fields, many of whom have worked in theoretical areas of their disciplines not requiring large experimental machines. The areas of notable achievement in British science include radio astronomy, high-energy and solid-state physics, neurophysiology, and molecular biology . . .

"Part of the reason the United Kingdom has been able to withstand the effects of austerity, to date at least, is reliance on selectivity in research support. This has been a major theme of British science policy in recent years. There is relatively little pressure in the United Kingdom to distribute research funds on the basis of criteria other than scientific excellence. Competition for research funds and for recognition among geographic regions and among different types of universities is less intense in Britain than in the United States, and cultural attitudes allow for deference to recognized elite groups more readily in Britain than in the United States. Moreover, funding levels have been predictable. There has been little growth; neither have there been many sharp cutbacks or extreme fluctations . . . .

"The [British] scientific community, like the rest of society, is subject to the overriding priorities of the government and, for the foreseeable future, these priorities reflect the conditions of austerity and economic difficulty facing the country. However, within the broad limits on expenditure set by general economic and political forces, the scientific community has important influence on scientific priorities and on the structure and membership of the advisory system. This influence is particularly strong during periods when, as is now the case, the level of R&D support is not expanding but is virtually constant."

DoD to Boost Graduate Fellowship Support

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1984 the Pentagon will be supporting as many as 400 of these four-year graduate fellowships, with stipends of $10,000 to $12,000 a year, to encourage students to pursue graduate studies rather than take jobs in industry.

While basic-research spending by the military will take a big jump in 1982, it represents only 3.5 percent of the Pentagon's total research and development budget for the year. Applied research projects such as chemical lasers, millimeter wave target detectors and robot devices programmed for specific tasks will receive $2.37 billion in 1982; advanced development projects, $3.162 billion, and engineering development, $8.47 billion. Most of these projects are performed in-house or through contracts with industry. Defense expects its total for R&D to reach $21.3 billion in 1982, about 57 per cent of the total federal R&D budget.

Oceanography will receive the biggest boost in basic-research support from the Pentagon during the coming fiscal year—a real increase of nearly 22 per cent, or $67.8 million overall. Research on new materials will receive the next largest increase, followed by biological and medical sciences, mechanics and energy conversion, and the atmospheric sciences.

According to the Pentagon, the areas that will be given special emphasis in 1982 include:

- Free-electron laser research to develop lasers capable of producing coherent radiation from the millimeter to the X-ray wavelength region.
- Ultra-small electronics research to study potential developments 10 to 20 years ahead of present technology.
- Research on human tolerances to environmental extremes, chemical and biological warfare and the effects of low-level radiation.
- Research on computer software, artificial intelligence and robotics.
- Physical oceanography.
- Development of new materials, ranging from alloys and compounds to materials with unusual electrical, optical, and magnetic properties.
- Research on new propulsion systems for ships and guns.

The Navy will contribute the biggest portion—$282 million—to basic research in 1982; the Army, $194 million; the Air Force, $151 million, and the Defense Advanced Research Projects Agency, a separate agency within the Defense Department that contracts research to universities, industries, and nonprofit organizations, $94 million.—Kim A. McDonald

(The author is an Assistant Editor of the *Chronicle of Higher Education.*)

In Print

Technology and Oceanography: An Assessment of Federal Technologies for Oceanographic Research and Monitoring, report by the Congressional Office of Technology Assessment to the Senate Committee on Commerce, Science, and Transportation, concludes that the $2.5-billion-a-year oceanography program is considerably short of administrative harmony. OTA, which tends to be discreet in its missives to the Congress, notes that "The 90 programs in the total Federal ocean effort are often scattered among different agencies whose missions or goals appear very similar. Overlap and duplication of effort does occur in some areas OTA has studied and is very difficult to identify....There is no consistency among agencies in their plans for future programs or capital expenditures. Some agencies include an inflation factor, and some do not." And so on. (161 pages, $5.50 per copy from the Superintendent of Documents, USGPO, Washington, D.C. 20402; specify Stock No. 052-003-00833-5).

The Department of Energy: Some Aspects of Basic Research in the Chemical Sciences, Part 2, a follow-up to a 1979 report, by the Committee on Chemical Sciences of the National Academy of Sciences. The not-at-all surprising news is that DOE seriously neglects the basic energy sciences (BES). Support in constant dollars "has declined since 1972, the year before the oil crisis, and represents a steadily declining fraction of the total DOE research budget..." (140 pages, available without charge, from: Committee on Chemical Sciences, National Academy of Sciences, 2101 Constitution Ave. NW, Washington, D.C. 20418.)

In addition, the following publications are available without charge from other offices of the National Academy of Sciences:

The Use of Sailing Ships for Oceanography—address: NAS Ocean Sciences Board.

Doctorate Recipients from United States Universities (Summary Report 1980)—address: NAS Commission on Human Resources.

Reducing Tankerbarge Pollution—address: NAS Maritime Transportation Research Board.

Manganese Reserves and Resources of the World and Their Industrial Implications—address: NAS National Materials Advisory Board.

Exchange Applications Available

Applications are available for the 1983 academic year round of scholarly exchanges sponsored by the US National Academy of Sciences and its counterparts in the Soviet Union and Eastern Europe. Address: NAS, Commission on International Relations, USSR/EE, 2101 Constitution Ave. NW, Washington, D.C. 20418; tel. (202) 334-2644-5.

Education Dept: On the Trail of Excellence

The Department of Education's creation of a National Commission on Excellence in Education is a departure from the Reagan Administration's general disdain for outside wisdom. But like most else in Reaganite policymaking, it has a class ingredient of value to the Administration's political fortunes.

The Commission, announced last month by Education Secretary Terrel H. Bell, reflects the Reaganite view that government has been doing too much for the downtrodden of society and not enough for the better folks. Thus Bell, in a press conference announcing the 18-member Commission, praised federal efforts in behalf of poor and handicapped students, but added that "our zeal has, if anything, pushed our priorities too much in that direction."

He said that efforts should continue for "bringing the bottom up," but that increased attention should also be paid to "challenging the outer limits of abilities and talents."

This perfectly reasonable appraisal reflects the commonly heard middle-class lament about the absence of serious intellectual challenge in public schools. And it finds support in results of standardized testing, which, in recent years, has recorded better scores at the lower end of the scale, while the scores among top students have remained steady or slipped. Among test specialists, it's generally thought that these contrary results reflect compensatory programs for the bottom-level students and an absence of challenge for their quicker classmates.

Bell, a veteran educator, said all the right things about providing help across the spectrum of academic ability. But with the Administration's budgetcutters off on another round of spending reductions, "new" money is the scarcest kind of money—which means that growth must be accompanied by shrinkage.

Bell set an 18-month work period for the Commission, but it's already being said at the Department that two years is more likely. The key, of course, is the fulltime staff, since the 18 commissioners are mainly busy professionals and, if the general track record of such study groups is any guide, it's doubtful that all 18 can periodically be assembled for face-to-face exchanges. The present schedule calls for quarterly meetings, with the first, it's hoped, to take place in October.

The staff, totaling about 16, all drawn from the Department of Education, will be headed by Milton Goldberg, who recently stepped down as Acting Director of the Department's National Institute of Education. (Appointed to head the NIE was Edward A. Curran, Headmaster of the National Cathedral School, who's awaiting routine Senate confirmation.) Goldberg spent 24 years as a teacher, principal, and administrator in the Philadelphia public school system before joining NIE six years ago.

Chairman Gardner stressed that the Commission is empowered only to state conclusions and recommendations and that no one is obliged to listen to it.

Members of the National Commission on Excellence in Education are:

David P. Gardner, President, University of Utah, *chairman.*
Yvonne W. Larsen, President, San Diego Board of Education, *vice-chairman.*
William O. Baker, retired Chairman, Bell Telephone Laboratories.
Anne Campbell, State Commissioner of Education, Nebraska.
Emeral A. Crosby, Principal, Northern High School, Detroit.
Charles A. Foster, Jr., President, Foundation for Teaching Economics.
Norman C. Francis, President, Xavier University of Louisiana.
A. Bartlett Giamatti, President, Yale University.
Shirley Gordon, President, Highline Community College.
Robert B. Haderlein, President, National School Boards Association.
Gerald Holton, Professor of Physics and of History of Science, Harvard University.
Annette Y. Kirk, former high-school teacher.
Margaret S. Marston, member, Virginia State Board of Education.
Albert H. Quie, Governor of Minnesota.
Francisco D. Sanchez, Jr., Superintendent of Schools, Albuquerque.
Glenn T. Seaborg, Professor of Chemistry, University of California at Berkeley.
Jay Sommer, foreign-language teacher, New Rochelle High School, New Rochelle, N.Y.
Richard Wallace, Principal, Lutheran High School East, Cleveland Heights, Ohio.

White House Science Office to Revive Council

Something resembling the old President's Science Advisory Committee (PSAC) is going to be revived as an appendage of the White House Office of Science and Technology Policy. But the new body is not to be as loftily situated as the old and influential committee, which was wiped out when President Nixon evicted science advice from the White House.

Science Adviser George A. Keyworth III told SGR that he's decided to put together a "standing committee" of advisers, but the difference between the new committee, as yet unnamed, and PSAC, he said, will be a major one: PSAC advised the President, in collaboration with the presidential Science Adviser. The new committee will be adviser to the adviser, and will not have a direct connection to the President.

Keyworth says he's collecting names to consider for membership, and that he's looking for people with broad experience and good judgment in science policy rather than "narrow expertise."

Still to be worked out, he said, is how the committee can live with the Federal Advisory Committee Act, which requires most federal advisory groups to meet in public—something that PSAC never did.

In recent weeks, Keyworth has been quietly arranging a series of staff appointments in his office, and when the whole new crew is in place, he plans an announcement, probably around the end of this month.

But in the meantime, here are some of the shifts that either have been made or are in the works:

Special Assistant to the Director, Tom Johnson, a physicist who formerly directed the Science Research Laboratory at the US Military Academy, West Point.

Assistant Director for National Security, Victor Reis, of the Lincoln Laboratory. Reis, a member of the lab's senior staff, is a veteran of high-level, high-tech strategic studies, including participation in a Defense Science Board study of laser and particle-beam weapons.

Assistant Director for International Affairs, Edward McGaffigan, formerly a science attache at the US Embassy, Moscow.

Assistant Director for Energy and Natural Resources, John Marcum, who served with OSTP in the Carter Administration. Prior to that, he was on the staff of the National Security Council, where he worked on nuclear non-proliferation and related matters.

Assistant Director for General Sciences, Douglas Pewitt, of the Department of Energy.

Assistant Director for Life Sciences and Institutional Relations, Denis Prager, who also served with OSTP in the last Administration.

Ben Huberman, who holds a joint appointment with OSTP and the National Security Council, stays on as OSTP Deputy Director. And still to be selected is an Assistant Director for Space.

The size of the OSTP staff, professionals and supporting cast, has been limited to 12 by the Office of Management and Budget—about half of what it was pre-Reagan. But when it comes to staff numbers, there's magic at the White House. Actually, there are already nine professionals on board at OSTP, plus four to five secretaries.

How's it done? Simple. Several of the professionals are "on loan" from other agencies. Pewitt, for example, was borrowed from the Department of Energy, and Prager continues on loan from his homebase, the National Institutes of Health. And Reis is with OSTP in a "consultant" status.

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